

**BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES
IN THE UNITED STATES PATENT AND TRADEMARK OFFICE**

Appellant (s) : Stefan Miersch
Serial No. : 10/008,603
For : Method and Apparatus for Producing Methane Gas
Filed : November 9, 2001
Examiner : Thanh P. Duong
Group Art Unit : 1764
Confirmation No. : 9226

CERTIFICATION OF SUBMISSION

I hereby certify that, on the date shown below, this correspondence is being transmitted via the Patent Electronic Filing System (EFS) to the U.S. Patent and Trademark Office.

Date:

October 26, 2006

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P.O. Box 1450
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Dear Sirs:

SECOND AMENDED APPEAL BRIEF UNDER 37 C.F.R. §41.37

This Second Amended Appeal Brief is being filed to correct the deficiencies in the Amended Appeal Brief filed May 22, 2006, which is an appeal from the final rejection of Claims 7-12 as stated in the Office Action mailed January 11, 2005. The Notice of Appeal was timely filed on April 27, 2005 along with a Pre-Appeal Brief Request for Review.

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I. REAL PARTY IN INTEREST

The real party in interest is Miller-St. Nazianz, Inc.

II. RELATED APPEALS AND INTERFERENCES

There are no prior pending related applications or patents under appeal, or the subject of an interference proceeding, or the subject of a judicial proceeding.

III. STATUS OF CLAIMS

All the claims of this application and their individual status are reported in the Claims Appendix of this Second Amended Appeal Brief. Claims 7-12 are on appeal.

IV. STATUS OF AMENDMENTS

All amendments have been entered.

V. SUMMARY OF CLAIMED SUBJECT MATTER

The current invention is a system and method of generating methane gas from organic material, e.g., animal waste. See, e.g., Abstract. A mixture known to product methane gas which may include animal waste and vegetation as desired, is treated, also as desired, with an inoculant and inserted into a plastic bag. The mixture is described on page 1, lines 20-22; and page 4, lines 20-24. The bag and bag filling are described on page 4, lines 1-18 and FIG. 1. A portion of the plastic bag is left unfilled with the organic material to produce a collection space for collecting the gas. See page 5, lines 13-19 and FIGS. 2 and 3. As the gas is generated, the gas migrates to the provided space and is typically removed, via tube or pipe, for collection and use as an energy source. See page 5, line 21 through page 6, line 7. An upper passage provided in the material enhances migration of the gas to the provided space. Id.

VI. GROUNDS OF REJECTION TO BE REVIEWED ON APPEAL

The issue on appeal is whether or not the following final rejections are in error:

Claims 7-8 and 11-12 were finally rejected under 35 U.S.C. § 103(a) as being unpatentable over Garvin et al. (US 5,461,843) in view of Bremmer (US 4,579,654) and Chow (US 4,157,958).

Claim 9 was finally rejected under 35 U.S.C. § 103(a) as being unpatentable over Garvin et al. in view of Bremmer and Chow and further in view of Courtland (US 3,981,803).

Claim 10 was finally rejected under 35 U.S.C. § 103(a) as being unpatentable over Garvin et al. in view of Bremmer and Chow in view of Courtland and further in view of Pogoda (US 4,267,147).

Claims 8-12 depend from independent Claim 7 and are therefore allowable over the prior art if Claim 7 is so allowable. Furthermore, all of the claims stand or fall together in this appeal. Therefore, although the Examiner provided separate support and/or rejections for the elements in each claim, only the rejection of Claim 7 is relevant.

VII. ARGUMENT

The Applicant believes that the Examiner's rejections are in error both from technology and legal grounds. First, the Examiner has misunderstood both the teachings of the primary reference and the fundamental science underlying the methane gas generation. Second, the proposed modification of the primary reference would completely alter the principle of operation of the primary reference and render the invention of that reference unsuitable for its original purpose. Third, the proposed modification would not work as either the original invention or as the invention currently under appeal. Fourth, if the proposed modification did work as the current invention, the result would potentially be a highly explosive mixture. Therefore, the Applicant requests that the Examiner's rejections be overturned.

ERROR 1: The rejection of Claims 7-12 under 35 U.S.C. §103(a) is in error because the proposed *prima facie* case is insufficient and also legally barred.

The Appellants believe that the Examiner has failed to meet the standards for an obviousness rejection and, therefore, has not established a *prima facie* case of obviousness.

A. Requirements for a *Prima facie* Case of Obviousness

The Examiner's fundamental error in rejecting the claims on appeal is that he has failed to establish a *prima facie* case of obviousness.

In rejecting claims under 35 U.S.C. §103, the examiner bears the initial burden of presenting a *prima facie* case of obviousness . . . 'A *prima facie* case of obviousness is established when the teachings from the prior art itself would appear to have suggested the claimed subject matter to a person of ordinary skill in the art . . . ' In *re Rijkkaart*, 9 F.3d 1531, 1532, 28 U.S.P.Q.2d 1955, 1956 (Fed. Cir. 1993).

Specifically, to establish *prima facie* obviousness of a claimed invention, all the claim limitations must be taught or suggested by the prior art. See *In re Royka*, 180 USPQ 580 (CCPA 1974). In addition, in order to establish a *prima facie* case of obviousness, the Examiner must show some objective teaching in the prior art or that knowledge generally available to one of ordinary skill in the art would lead that individual to combine the relevant teachings of the references. See, e.g., *In re Fine*, 5 USPQ2d 1596, 1598 (Fed. Cir. 1988). Furthermore, in leading one skilled in the

art, the prior art must suggest to the ordinary skilled artisan that the combination should be carried out and would have a reasonable likelihood of success, viewed in the light of the prior art. *In re Dow Chemical Co*, 5 USPQ2d 1529, 1532 (Fed. Cir. 1988)(emphasis added). Indeed, both the suggestion and the expectation of success must be found in the prior art, not in the Appellant's disclosure. *Id.* Additionally, the Federal Circuit has stated that a reference should be considered in its entirety, with due consideration given to disclosures that diverge or teach away from the invention as well as disclosures which direct one skilled in the art to the invention. *Ashland Oil, Inc. v. Delta Resins & Refractories, Inc.*, 227 U.S.P.Q. 657, 669 (Fed. Cir. 1985).

Furthermore, certain combinations or types of modifications of the prior art are legally barred to prevent the USPTO from applying improper hindsight to the obviousness determination. Relevant here, if proposed modification would render the prior art invention being modified unsatisfactory for its intended purpose, then there is no suggestion or motivation to make the proposed modification. *In re Gordon*, 733 F.2d 900, 221 USPQ 1125 (Fed. Cir. 1984). Equally relevant, if the proposed modification or combination of the prior art would change the principle of operation of the prior art invention being modified, then the teachings of the references are not sufficient to render the claims *prima facie* obvious. *In re Ratti*, 270 F.2d 810, 123 USPQ 349 (CCPA 1959).

B. Final Rejection

Claim 7 (and Claims 8 and 11-12) was finally rejected under 35 U.S.C. § 103(a) as being unpatentable over Garvin et al. (US 5,461,843) in view of Bremmer (US 4,579,654) and Chow (US 4,157,958). The Examiner states that "Garvin discloses a system for generating methane gas ... from compost," the system comprising: a flexible bag having an open end; the bag having a horizontally extended tube length, the majority of which is "filled with a substantially non-flowable biomass material (compost) in a composition known to produce methane gas (gas generated from compost) (sic)." Internal citations omitted. The Examiner further states that Garvin teaches that the remaining tubular length of the bag is unfilled with the material and that "the bag is tied off and filled with said gas emitted by biomass material (compost)." The Examiner admits certain limitations of the claims are not found in Garvin but he cites the secondary references for the missing disclosures.

C. Reasons the Rejection is in Error

The Applicant believes that all of these rejections are improper because the Examiner has misread Garvin and because the proposed modifications of the primary reference, Garvin et al., are legally barred. In particular, the Applicant believes that the proposed modifications change the principle of operation of Garvin et al. and also, the modified invention of Garvin et al. would be unsuitable for the purpose of the invention of Garvin et al.

The misreadings and technological inaccuracies of the Examiner's rejections are numerous. First, Garvin does not disclose a "system for generating methane gas," but, rather, never even mentions methane anywhere in the patent document. Second, the biomass material in Garvin is not "in a composition known to produce methane gas" as the Examiner asserts. The compost composition of Garvin is highly oxygenated (the system in Garvin provides a constant supply of oxygen to aid the decomposition or drying of the biomass). In contrast, methane generation from compost is an anaerobic process that must occur in the absence of oxygen. Clearly, an oxygenated composition cannot be a "composition known to produce methane gas." Moreover, the Applicant cannot find any reference in Garvin to tying off the bag and letting the unfilled space fill with gas emitted by the biomass material. Rather, as described more fully below, the bag in Garvin is vented and air is forced from a conduit through the material and out of the vent. These technical and understanding errors are at the heart of the improper rejections.

Second, as stated in the Abstract, Garvin et al. disclosed:

"A method and apparatus for treating bagged materials" A... conduit... through the open end of the bag and into the bag... is perforated and when the bag is filled, the length of the conduit is extended out through the bag end to be connected to a treatment media, e.g., forced air. An opening is provided at the rear end to provide an exhaust opening for air that is forced into the conduit, out the perforations and through the bagged material. The air will

dry the material to lower the moisture content or provide oxygen as may be desired to enhance decomposition.”

Therefore, based on the abstract and FIG. 1, in at least one embodiment, the principle of operation for the invention of Garvin et al. is forcing air through a perforated conduit that extends through a bag of bagged materials such that the forced air from the perforated conduit flows through the bagged materials prior to escaping through an open vent. As stated in the specification the forced air is “vented to the atmosphere as indicated by arrows 36.” See col. 4, lines 20-26. The purpose of this embodiment of Garvin et al. is to either dry the bagged material or provide oxygen to facilitate decomposition of the bagged material. See the abstract.

As such, the proposed combination of references will impermissibly alter the principle of operation of Garvin et al. Instead of forcing air through the perforated conduit and then through the bagged material and then exhausting through a vent to the atmosphere, the modifications would require that the vent 34 be eliminated so that the methane gas emitted by the biomass would be able to remain within the bag to be collected through the perforated conduit. Also, instead forcing air through the conduit and into the biomass material, the modified combination would require that methane gas from the bag flow through the conduit to a collection site. If the proposed modification or combination of the prior art would change the principle of operation of the prior art invention being modified, then the teachings of the references are not sufficient to render the claims *prima facie* obvious. *In re Ratti*, 270 F.2d 810, 123 USPQ 349 (CCPA 1959).

Next, the proposed combination of references would render the modified disclosure of Garvin et al. unsuitable for the purpose of Garvin et al. Specifically, air would no longer be forced through the biomass and into the atmosphere to remove gases emitted from the biomass (water vapor and/or decomposition products). Note also, the presence of oxygen hinders the

production and collection of methane due at least in part to the rapid and spontaneous reaction of methane with oxygen and also to the anaerobic process for producing methane. Therefore, excluding oxygen by not forcing air through the biomass would not be satisfactory for the purpose of providing oxygen to enhance desired decomposition. If proposed modification would render the prior art invention being modified unsatisfactory for its intended purpose, then there is no suggestion or motivation to make the proposed modification. *In re Gordon*, 733 F.2d 900, 221 USPQ 1125 (Fed. Cir. 1984).

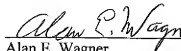
Third, as mentioned above, methane is generated by an anaerobic process. Modifying the aerobic process of Garvin, as proposed by the Examiner, will still result in an aerobic process. Such an aerobic process will not function to produce methane.

Fourth, even if the proposed modifications would produce methane, the user would be left with an air-methane mixture. Such air-methane mixtures are known to be potentially highly explosive at methane concentrations of 6 to 15 percent. One skilled in the art of composting would not be motivated to modify a prior art invention to make potential bombs out of their users farms.

For the reasons stated in the above argument, Appellants believe that the claims on appeal comply with 35 U.S.C. §103(a), and they request that the final rejection of the claims on appeal be reversed.

Respectfully submitted,

Date: October 26, 2006



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VIII. CLAIMS APPENDIX

1. (Withdrawn) A method for producing methane gas which comprises:

providing a biomass material that will yield methane gas;

adding or not adding inoculants as desired and inserting the biomass material into a large flexible plastic bag having a horizontally extended tubular length to provide a first portion of the bag filled with the biomass material and sealing off both ends of the bag to provide a second bag portion at one end that is unfilled with the material;

said material emitting methane gas that is directed to the second bag portion;

connecting a tube into the bag at the unfilled bag portion with an end of the tube protruded from the bag; and

directing methane gas from the bag and through the tube to a point of collection or use.

2. (Withdrawn) A method as defined in Claim 1 including placing a perforated conduit inside the bag along the top of the filled portion of the bag and extended to the unfilled portion of the bag and thereby facilitating flow of the gas to the unfilled portion.

3. (Withdrawn) A method as defined in Claim 1 including placing aeration tubes in the biomass material in the filled portion of the bag and extending an end thereof to the bag exterior and compost treating the material following substantial extraction of the methane gas from the material.

4. (Withdrawn) A method as defined in Claim 1 including filling multiple bags with the biomass material in accordance with Claim 1 and further including a gas line interconnected with the multiple tubes of said multiple bags and conveying methane gas through the gas line to a collection site.

5. (Withdrawn) A method as defined in Claim 1 including placing the bag on a heating pad while being filled and upon being filled, directing hot water to the heating pad to heat the filled bag as desired and to enhance the reaction of the methane gas production.

6. (Withdrawn) A method as defined in Claim 1 which includes placing an insulating robe over the bag, inserting water lines between the robe and bag and flowing hot water through the lines to achieve a desired temperature of the material in the bag.

7. (Previously presented) A system for generating methane gas which comprises:

a flexible bag having an open end for mounting to a bag filling machine for filling and compacting the bag with non flowable material, said bag having a horizontally extended tubular length, a majority of said length filled with substantially non-flowable biomass material in a composition known to produce methane gas and as desired adding an inoculant to the material that induce a reaction with the biomass material to include methane gas emission from the biomass material;

a remaining tubular length of the bag as removed from said machine being unfilled with the material, said open end tied off and filled with said gas emitted by the biomass material, a pipe inserted through the bag wall where filled with said gas for releasing methane gas from the remaining tubular length and a continuation of said pipe directing said gas to a gas collection site.

8. (Original) A system as defined in Claim 7 wherein a conduit is positioned inside the bag at the top of the material in the filled tubular length and extended to the unfilled tubular length for transmitting as to the unfilled tubular length.

9. (Original) A system as defined in Claim 8 wherein a heating bag underlies the bag, water passages are provided in the pad and connected to a hot water source for flowing hot water through the pad and heating thereby the material in the bag.

10. (Original) A system as defined in Claim 9 wherein a robe is placed over the bag, water lines are positioned between the bag and robe and hot water is circulated through the lines for heating the material in the bag.

11. (Original) A system as defined in Claim 7 wherein multiple of the defined bags are placed in adjacent relationship and a gas line is connected to the pipes and extended to a collection site for transmitting gas from the bag to the collection site.

12. (Original) A system as defined in Claim 7 wherein the dominant portion of the biomass material is animal waste.

IX. EVIDENCE APPENDIX

None

X. RELATED PROCEEDINGS APPENDIX

None